



DEPARTMENT OF TRANSPORTATION
HAZARDOUS MATERIALS REGULATIONS BOARD
WASHINGTON, D.C. 20590

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[49 CFR Parts 173, 179]

[Docket No. HM-90; Notice No. 74-2]

**BOTTOM OUTLETS ON FLAMMABLE
COMPRESSED GAS TANK CARS**

Notice of Proposed Rule Making

The Hazardous Materials Regulations Board is considering amendments to §§ 173.314, 179.102-3, and 179.103-5 of the Department's Hazardous Materials Regulations pertaining to prohibiting bottom outlet devices on DOT Class 114A tank car tanks used for the transportation of liquefied flammable compressed gases.

The Board on August 25, 1971, in Docket Number HM-90, Notice 71-24 (36 FR 16680) proposed amendments to § 179.103-5 dealing with bottom outlet devices on DOT Class 114A tank cars. By a supplemental notice published on September 23, 1971 (36 FR 18873), this proposed amendment was deleted and withdrawn from the docket after the Board determined from comments received that the amendment proposed should be the subject of a separate rule-making proceeding.

There are approximately 175,000 tank cars approved for the rail transportation of hazardous materials and other non-hazardous commodities. Of this total are approximately 650 specification W tank cars, equipped with bottom outlets used for the transport of compressed gases.

The Railway Progress Institute/Association of American Railroads "Tank Car Safety Research and Test Project" study of railroad accidents during the period of 1965-1972 indicates that there were 2,624 reported accidents involving some 4,385 tank cars. The lading loss (monetary) from tank cars attributable to accidents during 1965-1970 amounted to more than \$300,000; not including resultant property and other damages, etc.

The Board, in the interim, has become increasingly aware of the poor safety performance record of bottom fittings currently authorized on DOT Class 114A tank cars. Incident reports received by the Board indicate that there has been an increase in the number of liquefied flammable compressed gas leaks occurring through tank car bottom outlet devices even when the tank car has not been involved in any accident.

There have been eight reported leakage incidents of flammable compressed gas from specification 114A-W type tank cars, six of which occurred during 1972. Two leakage incidents were attributable to derailments. There is currently an industry study of the feasibility, as well as the design features, for bottom outlet devices and fittings for tank cars used to transport hazardous materials.

The Board's review of the leakage incident reports indicates that in large part, the failure of these devices is due to their inadequate maintenance or a

deficiency in their design. As a result of these findings and in view of the serious threat to the public safety, the Board proposes to prohibit bottom outlets on DOT Class 114A tank cars. The proposed changes would not become effective (mandatory) until 6 months after issuance of the final rules.

Pursuant to the provisions of Section 102(2)(c) of the National Environmental Policy Act (42 U.S.C. 4321 et seq.), the Board has considered the requirements of that Act concerning Environmental Impact Statements and has determined that the amendments proposed in this notice would not have a significant impact upon the environment. Accordingly, an Environmental Impact Statement is not necessary and will not be issued with respect to the proposed amendments.

In consideration of the foregoing, it is proposed to amend 49 CFR Parts 173 and 179 as follows:

PART 173—SHIPPERS

In the Table contained in paragraph (c) of § 173.314, Note 23 would be added and reference thereto made in Column 1 of the Table in the following entries:

§ 173.314 Requirements for compressed gases in tank cars.

* * * *

Butadiene (pressure not exceeding 255 pounds per square inch at 115° F.), inhibited; Note 23.

Butadiene (pressure not exceeding 300 pounds per square inch at 115° F.), inhibited; Note 23.

Liquefied petroleum gas (pressure not exceeding 255 pounds per square inch at 115° F.); Note 23.

Liquefied petroleum gas (pressure not exceeding 300 pounds per square inch at 115° F.); Note 23.

Methylacetylene-propadiene, stabilized; Note 23.

* * * *

NOTE 23: Bottom unloading of flammable compressed gas is prohibited, and bottom outlets must be sealed and rendered inoperative in such a manner as to preclude their use for bottom unloading.

PART 179—SPECIFICATIONS FOR TANK CARS

(A) In § 179.102-3, paragraph (a) (4) would be added to read as follows:

§ 179.102 Special commodity requirements for pressure tank car tanks.

§ 179.102-3 Liquefied flammable gases.

(a) * * *

(4) Bottom unloading of flammable compressed gas is prohibited. Bottom outlets must be sealed and rendered inoperative in such a manner as to preclude their use for bottom unloading.

(B) In § 179.103-5, the introductory text of paragraph (a) and paragraphs

(a) (1) and (a) (2) would be amended to read as follows:

§ 179.103 Special requirements for class 114A * * * tank car tanks.

§ 179.103-5 Bottom outlets.

(a) Tanks may be equipped with approved bottom outlet valves in addition to, or in place of the venting, loading, and unloading valves, measuring and sampling devices as prescribed in § 179.103-3 of this section. For flammable compressed gases see § 179.102-3(a) (4). If applied, bottom outlet valves must meet the following requirements:

(1) When an external bottom outlet valve without interior pipes is used, the valve opening must be closed with an internal bolted or self-energizing closure of approved design. Protective housing around the external bottom outlet valve is not required. On cars with center sills, a ball valve may be welded to the outside bottom of the tank or mounted on a pad or nozzle with a tongue and groove or male and female flange attachment, but in no case shall the breakage groove or its equivalent extend below the bottom flange of the center sill. On cars without continuous center sills, a ball valve may be welded to the outside bottom of the tank or mounted with a tongue and groove or male and female flange attachment on a pad attached to the outside bottom of the tank. The mounting pad must have a maximum thickness of 2½ inches measured on the longitudinal centerline of the tank. The valve operating mechanism must be provided with a suitable locking arrangement to insure positive closure during transit.

(2) When an internal bottom outlet valve is used, the outlet of the valve must be equipped with an excess flow valve of approved design, except when a quick-closing internal valve of approved design is used. Protective housing for the internal bottom outlet valve is not required.

* * * *

Interested persons are invited to give their views on this proposal. Communications should identify the docket number and be submitted in duplicate to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590. Communications received before May 28, 1974, will be considered before final action is taken on the proposal. All comments received will be available for examination by interested persons at the Office of the Secretary, Hazardous Materials Regulations Board, Room 6215, Buzzards Point Building, Second and V Streets, SW., Washington, D.C., both before and after the closing date for comments.

This proposal is made under the authority of sections 831-835 of Title 18, United States Code, and section 9 of the Department of Transportation Act (49 U.S.C. 1657).

Issued in Washington, D.C., on February 20, 1974.

MAC E. ROGERS,
Board Member, for the
Federal Railroad Administration.
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